Emory and Georgia Tech:

Making Atlanta a hot spot in the innovation economy

James Wagner, President
Emory University

Wayne Clough, President
Georgia Tech

Metro Atlanta Chamber of Commerce
May 18, 2006

Emory's economic impact

Student enrollment	11,500
Students' nondiscretionary spending annually	$40 million
Employees (including Emory Healthcare)	22,000
Day visitors to University & hospitals (annually)	1.6 million
Overnight visitors	700,000
Local spending by visitors	$110 million
Direct economic impact	$2.45 billion
Indirect economic impact	$1.75 billion
Total economic impact	**$4.2 billion**

Georgia Tech's economic impact

Student enrollment	17,135
Employees	13,700
Annual research expenditures (FY 2005)	$425 million
Invention disclosures (FY 2005)	324
US patents issued (FY 2005)	43
New companies created in last 5 years	52
Direct economic impact (FY 2004)	$2.2 billion
Indirect economic impact	$1.7 billion
Total economic impact	**$3.9 billion**

Added together…

… Emory and Georgia Tech are Atlanta's largest business.

Student enrollments	28,635
Employees	35,700
Payroll and benefits	$1.8 billion
Operating budgets	$3.2 billion
Construction expenditures	$378 million
Direct economic impact	$4.65 billion
Indirect economic impact	$3.45 billion
Total annual economic impact	**$8.1 billion**

Did you know that…

Emory generates “brain gain” for metropolitan Atlanta.

- 20% of students from Georgia; 33% of Emory live in metro Atlanta.
- 1/3 of MBA students from Georgia; 2/3 begin career in Atlanta.

The Vaccine Research Center at the fore of antiviral research.

- Antiviral therapies – market size projected at $34 billion by 2010 .
- Georgia has top-ten potential as producer of antivirals and vaccines.
- 2005 royalties from Emtriva brought $540 million to Atlanta for scientific research and education.

Did you know that…

Emory helps Atlanta be the "public health capital of the world."

- Shares Clifton Corridor with CDC, American Cancer Society.
- Rollins School of Public Health: unique international role.
- Carter Center : unique, strong role in public health in Africa.
- Developed Emtriva, leading HIV therapy in the world.

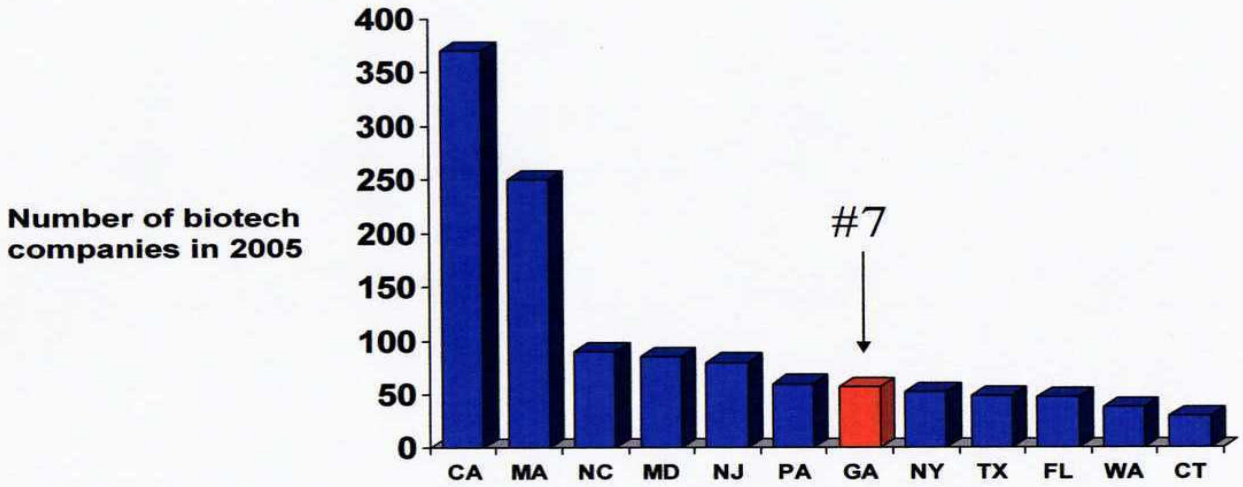
Emory Healthcare makes Atlanta a healthcare destination.

- Research funding for 2004-05: $326 million.
- Provided $66.5 million in charity care in 2005.
- More than 4 million patient visits in 2005.
- Hospital admissions: 123,658
- Plans $1+ billion in hospital and clinic upgrades over ten years.

Did you know that...

GEORGIA RESEARCH ALLIANCE

Consistent stable growth in bioscience represents real progress & opportunity



GA's Previous Rankings

2004 – 8th
2002 – 11th
2000 – 12th
1995 – Not ranked

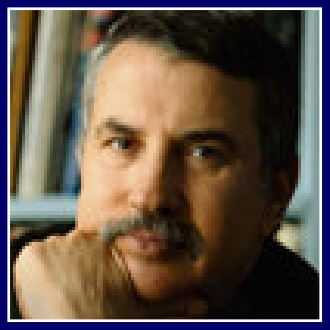
Source: Ernst & Young 2006 Annual Report

Did you know that…

- Georgia Tech ranks among nation's top 10 public universities and among the nation's top 5 engineering schools.
- Georgia Tech is among the nation's top 5 universities in research with industry.
- Tech graduates more engineers than any other university in the nation, is a national leader in producing minority and female engineers.
- 43% of Tech undergrads participate in structured research; 33% study abroad.

Did you know that…

- Tech has 4 campuses on 3 continents.
- Tech has 10 research facilities around the nation.
- Tech is home to 16 National Centers of Excellence.
- Tech faculty have won 107 NSF CAREER Awards, 2nd in the nation.
- Tech funds 82% of its own construction and has done $1 billion in improvements to its campus in the past decade.
- Georgia Tech is featured in Tom Friedman's new, expanded edition of *The World is Flat*.



Living in the flat world

- By 2010, 90 percent of the world's scientists and engineers will live in Asia.
- The US has increased nanotechnology research funding to $1 billion a year, but Western Europe and Japan have kept pace, and other nations are also making significant investments.
- 6 of the world's 25 most competitive IT companies are headquartered in the US; 14 are headquartered in Asia.

The United States must learn to compete in a world in which…

- The largest technological workforces reside in other nations.
- We generate only one of four or five major inventions.
- Our wages and health care costs are higher than our global competitors.
- The domestic market we offer is very small compared to Asia.

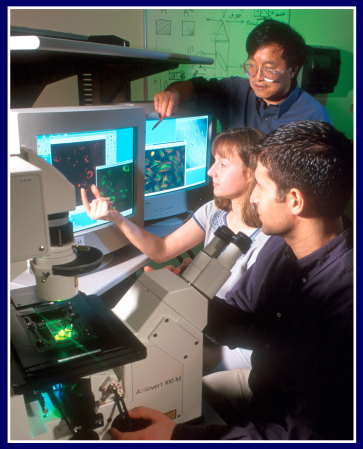
"Innovation fosters new ideas, technologies, and processes that lead to better jobs, higher wages, and a higher standard of living. For advanced industrial nations no longer able to compete on cost, the capacity to innovate is the most critical element in sustaining competitiveness."

InnovateAmerica
National Innovation Initiative report

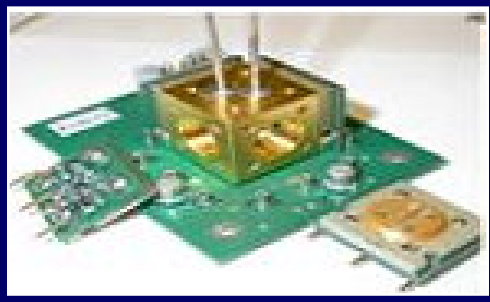
Georgia Tech: Driving innovation

Sustainable technology

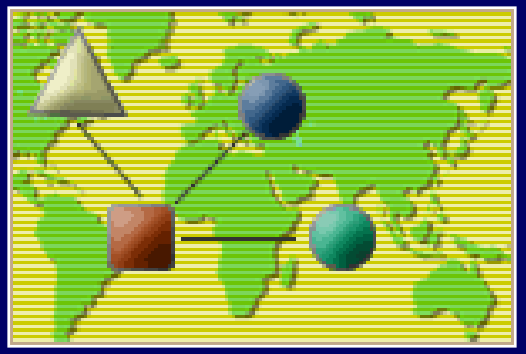
Nanotechnology



Biotechnology/
nanomedicine



Microelectronics/
telecommunications



Logistics

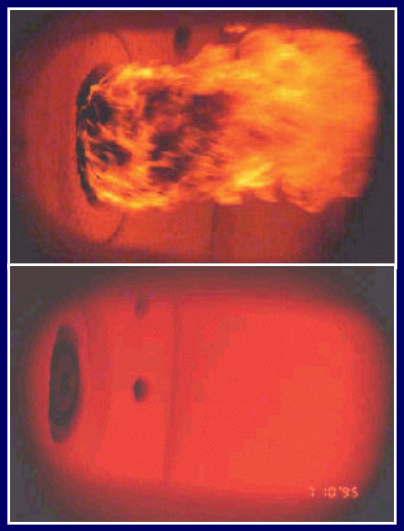
Photonics/optics

Manufacturing

Meeting future energy challenges

Georgia Tech

Efficient, inexpensive, flexible solar cells



Flameless combustion

Usable wind power

Biofuels to ease reliance on oil

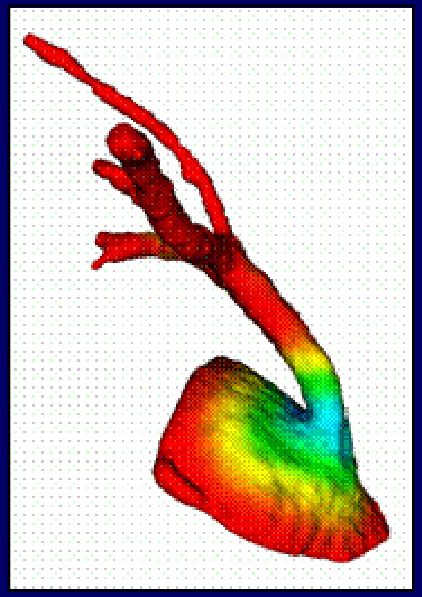
Technology to make cell phones, PDAs and MP3 players more efficient

Computing the future

Georgia Tech

"Gesture pendant" at GT's Aware Home allows control of household appliances

The "free-digiter" and a computerized system for sign language



Biomedical modeling

The Razor at the Institute for Systems Biology is the world's 41st fastest computer

Water for life

Georgia Tech

Improving water quality in Angola

Mapping a water line to a remote Honduran village

Engineering our campus for water sustainability

Providing expertise for Atlanta's sewer improvement plan.

Designing a water management system for the Nile River

Growing new companies

Enterprise Innovation Institute

- Industry Services
- Commercialization Services
- Entrepreneur Services
- Community Policy & Research
- Strategic Partners Office:
  A bridge to connect companies to a broad range of Georgia Tech resources and experts

Advanced Technology Development Center

Technology Enterprise Park

The critical role of partnerships

- Of universities with industry
- Through like the organizations the Georgia Research Alliance and the Georgia Cancer Coalition
- Between universities like Georgia Tech and Emory

"What the Georgia Tech model recognizes is that the world is increasingly going to be operating off the flat-world program, with its tools for all kinds of horizontal collaboration."

Thomas L. Friedman
The World is Flat, 2006 edition

Biomedical Engineering

Wallace H. Coulter Department of Biomedical Engineering

1987 Emory and Georgia Tech form joint research center

1992 Joint M.S. degree in bioengineering

1993 Institute for Bioengineering and Bioscience is created

1994 Joint Ph.D. degree program in bioengineering

1996 Institute for Bioengineering and Bioscience named for Parker H. Petit.

1997 Georgia Tech and Emory create the joint BME Department.

1998 Emory purchases the Briarcliff Campus to develop a biotechnology incubation center in collaboration with Georgia Tech

Research awards to BME in Fiscal Year 2005: $23.36 million, mostly from NIH ($17.75) and NSF ($1.99), with $1 Million other federal.

Planning for the future

Understanding Religions and the Human Spirit

Understanding Race and Difference

Predictive Health and Society

Implementing Pathways to Global Health

Computational and Life Sciences

Neuroscience, Human Nature, and Society

Making Atlanta a hot spot

- Create structure for public universities that facilitates responsiveness, agility, and ability to create and support partnerships.
- Interact with industry (push/pull)
- Emphasize partnerships, collaboration, alignment of strategic initiatives
- Investment: Other states have caught up
  - CA: $3 billion for stem cell research, $500 million biotech seed fund
  - FL: $510 million for Scripps Research Institute branch
  - CT: $100 million for stem cell research
  - NC: $650 million investment in NC Biotechnology Center
  - TX: $100 million for Emerging Technologies Fund